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document A lattice of Magneto-Optical and Magnetic traps for cold atoms Axel Grabowski and Tilman Pfau 5.Physikalisches Institut, Universität Stuttgart, Pfaffenwaldring 57, 70550 Stuttgart, Germany abstract We describe basic periodic trapping configurations for ultracold atoms above surfaces. The approach is based on a simple wire grid and can be scaled to provide large arrays of periodically arranged magnetic or magneto-optical traps. The unit cells of the trap lattices are based on crossed wire segments. By alternating the current directions in the wires of the grid it can be distinguished between 3 basic lattice configurations. As a first demonstration, we used macroscopic wires in a 2 layer configuration to realize the unit cells of the lattices. With this experimental setup, we observe two of the basic unit cells and an array of 2x2 magneto optical traps.